



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,649	09/12/2003	Charles Yang	BHT-3183-54	7576

7590 06/15/2007  
TROXELL LAW OFFICE PLLC  
SUITE 1404  
5205 LEESBURG PIKE  
FALLS CHURCH, VA 22041

EXAMINER
----------

LE, TUAN H

ART UNIT	PAPER NUMBER
----------	--------------

2622

MAIL DATE	DELIVERY MODE
-----------	---------------

06/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/660,649

Applicant(s)

YANG ET AL.

Examiner

Tuan H. Le

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2622

***Response to Amendment***

Applicant's amendments to drawings filed on March 14, 2007 have been considered and accepted by Examiner.

***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshino (U.S. Pat. 6,759,642) and further in view of Takagi et al (U.S. 20020044215) and Segawa et al (U.S. Pub. 2002/0057468 A1).**

Regarding **claim 1**, Hoshino discloses a thin type camera module comprising: a fixing board (5); an imaging-sensing semiconductor assembly (2) comprising a COF (chip-on film) wiring film (10) and an image sensing chip (11), (see Hoshino, Figs. 1-2), wherein the COF wiring film has a surface, a window and a plurality of connecting ends disposed on the surface of the COF wiring film around the window, (see Hoshino, Fig. 3), the image sensing chip has a photosensitive surface (15) corresponding to the window, (see Hoshino, column

Art Unit: 2622

3 lines 35-40), and a plurality of bumps (16) are formed on peripherals of the photosensitive surface, the image sensing chip is flip-chip mounted on the COF wiring film to electrically connect the bumps with the connecting ends, (see Hoshino, column 3 lines 45-59).

However, Hoshino discloses neither a top surface and a recession indented from the top surface, wherein the recession having an undersurface nor a bottom surface attached to the undersurface of the recession.

On the other hand, Takagi et al discloses a package (221) having a top surface and a recession indented from the top surface, wherein the recession having an undersurface, wherein the package is used to accommodates an imaging device (223), (see Takagi et al, Fig. 21 and paragraph [0123]).

Therefore, it would have been obvious to an artisan to shape the fixing board (5) as described by Hoshino into the same shape of the package (221) as described by Takagi et al in order to accommodate an imaging device because the resulting board with the new shape can protect the imaging device from external environment;

Hoshino and Takagi et al does not explicitly disclose a lens holder connecting a fixing board.

However, Segawa et al discloses a lens holder (13) for connecting a camera lens (5), wherein the lens holder has a light-pervious channel and is connected with the fixing board (1) to form a airtight space for sealing the image sensing chip (7), and the photosensitive surface of the image sensing chip is

Art Unit: 2622

corresponding to the light-pervious channel for capturing image, (see Segawa et al, Figs. 1-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the lens holder as described by Segawa et al into the camera module as described by Hoshino and Takagi et al in order to achieve a camera module with a lens holder because such implementation reduces the thickness of the camera.

As for **claim 2**, as previously mentioned in the discussion of claim 1, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. In addition, Hoshino discloses at least an electric device (6A-6D or 7A-7C) electrically connected with the COF wiring film (10), (see Hoshino, Fig. 1).

As for **claim 3**, as previously mentioned in the discussion of claim 2, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Hoshino, Takagi et al, and Segawa et al do not explicitly disclose that the electric device is a passive component. However, it is obvious to one of ordinary skill in the art at the time the invention was made to use an electric device embedded in chip component 3, (see Segawa et al, Fig. 1), as a passive component, for example resistor is applied to a sub-circuit in order to obtain desired current or voltage.

As for **claim 4**, as previously mentioned in the discussion of claim 2, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Furthermore, Hoshino discloses that the COF wiring film (10)

formed a module circuit (13) electrically connecting the electric device (6A-6D or 7A-7C), (see Hoshino, Figs. 1 and 3).

As for **claim 5**, as previously mentioned in the discussion of claim 4, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Additionally, Hoshino discloses that the module circuit (13) is formed on an extending surface of the COF wiring film (10) without being covered by the lens holder, (see Hoshino, Figs. 1-3).

As for **claim 6**, as previously mentioned in the discussion of claim 1, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Additionally, Hoshino discloses that a sealant layer (17) is formed around the window (14) of the COF wiring film (10) for enclosing the bumps (16) of the image sensing chip (11), (see Hoshino, Figs. 2-3).

As for **claims 7, 8, and 9**, as previously mentioned in the discussion of claim 6, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Furthermore, Hoshino discloses that the sealant layer (17) is formed of glass epoxy resin, i.e. anon-conductive film (see Hoshino, Fig. 2 and column 3 lines 60-64 ).

As for **claim 10**, as previously mentioned in the discussion of claim 1, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Moreover, Hoshino discloses that the COF wiring film (10) has at least a conductive via (land portion) electrically connecting the connecting ends, (see Hoshino, Fig. 3 and column 3 lines 25-34).

As for **claim 11**, as previously mentioned in the discussion of claim 1, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Furthermore, Segawa et al discloses that the lens holder (13) comprises a filter aligning with the light-pervious channel, (see Segawa et al, Fig. 2 and paragraph [0032]).

As for **claim 12**, as previously mentioned in the discussion of claim 1, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. Moreover, Segawa et al discloses a camera lens (5) connected with the lens holder (13), (see Segawa et al, Fig. 2).

As for **claims 14 and 15**, as previously mentioned in the discussion of claim 1, Hoshino, Takagi et al, and Segawa et al disclose all of the limitations of the parent claim. In addition, Hoshino et al discloses a conventional module structure by hermetically sealing the image pickup element, (see Hoshino, column 6 lines 25-39, wherein an airtight space is applied). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fill the airtight space with vacuum state or inert gas because a vacuum state or inert gas eliminates the possibility of contaminated air form adversely effecting the sensor.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Kitagawa (U.S. Pat. 6,507,443 B2) discloses a camera module installed in an electrical equipment.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

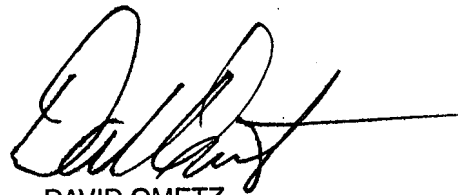
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Le whose telephone number is (571) 270-1130. The examiner can normally be reached on M-Th 7:30-5:00 F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tuan Le/  
Patent Examiner

A handwritten signature in black ink, appearing to read 'David Ometz', with a long horizontal line extending to the right.

DAVID OMETZ  
SUPERVISORY PATENT EXAMINER